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JAN 03 2012

Ms. Claudia Hosch
Associate Director, NPDES Permits
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Ms. Hosch:

This is in response to your letter to National Marine Fisheries Service (NMFS) dated January 25, 2011, submitted pursuant to Section 7 of the Endangered Species Act (ESA) of 1973. The correspondence was regarding the potential impacts to ESA-listed species under NMFS purview from the proposed five-year renewal of an Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit (GP) TXG260000, for discharges from existing source and new source oil and gas extraction facilities to the territorial seas off Texas. In your letter you determined the proposed action will not adversely affect any ESA-listed species or their critical habitat, and requested concurrence with your determination.

This interagency consultation follows the 2003 correspondence between EPA and NMFS in which EPA sought concurrence that the re-issuance of the above mentioned GP was not likely to adversely affect protected species under NMFS' purview. NMFS provided concurrence on that proposed GP in a consultation letter dated June 20, 2005 (I/SER/2003/01506), included herein by reference. The current re-issuance of this GP does not relax any of the permit conditions under the expired permit, but rather adds more monitoring requirements and fish/shellfish impingement/entrainment control measures.

For the current action the EPA proposes to re-issue GP TXG260000 for new and existing sources in the Offshore Subcategory of the Oil and Gas Extraction Category which are located in the territorial seas off Texas. The expired GP authorized discharges from exploration, development, and production facilities located in and discharging to the territorial seas off Texas, which are defined in the Clean Water Act, Section 502 (8), as "the belt of seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles." This permit was also available to those facilities not located within the territorial seas, but that were found in close proximity to, and discharged into, the above mentioned waters. The GP prohibited the discharge of drilling fluid, drill cuttings, and produced sand. The permit allowed the discharge of deck drainage, produced water, well treatment, completion, and workover fluids, sanitary waste, domestic waste, and miscellaneous discharges, although each of these discharges was regulated by conditions outlined in the permit. Authorized discharges were required to meet state water quality standards as approved by the EPA, that were designed with the intention of insuring the health of aquatic and terrestrial life, including protected species, by regulating nutrients, toxic substances, radiological substances, temperature, salinity, dissolved oxygen, pH, and aquatic life uses within water bodies of Texas (30 TAC 307.4). Additionally, EPA also required toxicity testing to ensure that the produced water discharges are not toxic to human, terrestrial, or aquatic life, and required monitoring for most types of discharges to ensure the safety of the surrounding environment. The current



proposal will retain all limitations and conditions of the previous permit, authorizing the following types of discharges with the noted restrictions:

1. **Produced water** – The water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil or gas. This can include formation water, injection water, and any chemicals added down-hole or during the oil/water separation. Since the oil/water separation process does not completely separate the oil, some hydrocarbons remain with the produced water and often the water is treated to prevent the formation of sheen. The composition of the discharge can vary greatly in the amounts of organic and inorganic compounds and may include: aluminum, arsenic, barium, benzene, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, silver, and zinc among others. The EPA general permits allow the discharge of produced waters provided they meet discharge criteria. Discharge volumes are variable and may range from 500-2,500 barrels per day.

Restrictions: Discharged oil and grease cannot exceed 42 milligrams per liter (mg/l) daily maximum or 29 mg/l monthly average (technology-based limits). The discharge must also be tested for toxicity on a monthly basis.

Toxicity testing: Platforms wishing to discharge produced waters will be required to test the effluent for toxicity. Platforms are not permitted to discharge produced waters unless both acute and chronic toxicity tests are passed. Test results are good for a period of 6 months.

7-day chronic toxicity testing – Tests the survival and growth of mysid shrimp (*Mysidopsis bahia*) and larval inland silversides (*Menidia beryllina*) in a series of effluent dilutions (different dilutions based on a critical dilution as determined by flow rates and the depth of discharge for each platform) in comparison to a control group. The purpose of the test is to determine the greatest effluent dilution at which no significant effect is observed between the test and the control (no observable effects concentration - NOEC). The 7-day average minimum and monthly average minimum NOEC must be equal to or greater than the critical dilution concentration. Test is to be completed at least every 6 months.

24-hour acute toxicity testing – Tests the survival of mysid shrimp and inland silversides in undiluted effluent over a 24-hr period of time. The test will determine if the effluent sample meets the Texas Surface Water Quality Standard listed at 30 TAC 307.6(e)(2)(B) of greater than 50% survival during the 24-hour time period. Test is to be completed at least every 6 months.

Monitoring: Grab sampling for oil and grease analysis will be conducted once per month.

2. **Well treatment, completion fluids, and workover fluids**

- a. Well treatment fluids are any fluids used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled. These fluids are typically added down-hole and mostly remain within the wellbore; any fractions that may escape are subject to the limitations described in the following restrictions.
- b. Completion fluids are salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production.
- c. Workover fluids are salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow for maintenance, repair, or abandonment procedures. This includes packer fluids.

Restrictions: No free oil as measured using the static sheen test method and no priority pollutants except in trace amounts (as established in the 2005 issued permit) may be

- b. Blowout preventer control fluid – fluid used to actuate the hydraulic equipment on the blow-out preventer or subsea production wellhead assembly. These may be discharged periodically in small quantities (67-314 barrels per day, EPA 1993) at the seafloor.
- c. Boiler blowdown – discharges from boilers necessary to minimize solids build-up in the boilers, including vents from boilers and other heating systems. Based on past operations, may be discharged at a volume of 0-5 barrels per day (EPA 1993).
- d. Diatomaceous earth filter media – filter media used to filter seawater or other authorized completion fluids and subsequently washed from the filter.
- e. Excess cement slurry – the excess mixed cement, including additives and wastes from equipment washdown, after a cementing operation.
- f. Mud, cuttings, and cement at the sea floor – discharges that occur at the seafloor prior to installation of the marine riser and during marine riser disconnect, well abandonment, and plugging operations.
- g. Source water and sand – water from non-hydrocarbon bearing formations for the purpose of pressure maintenance or secondary recovery.
- h. Uncontaminated or treated ballast/bilge water – seawater added or removed to maintain proper draft or water from a variety of sources that accumulates in the lowest part of the vessel/facility. Volumes may be expected to range from 70-620 barrels per day (EPA 1993).
- i. Uncontaminated freshwater or seawater – waters discharged without contact with or addition of chemicals, oil, or other wastes.

Restrictions: No free oil, floating solids, or foam shall be discharged.

Monitoring: Observations shall be made once per week.

7. Chemically treated seawater and freshwater – waters to which corrosion inhibitors, scale inhibitors, biocides, and/or other chemicals have been added and include the following discharges:

- a. Excess seawater which allows the continuous operation of fire control and utility lift pumps;
- b. Excess seawater from pressure maintenance and secondary recovery projects;
- c. Water released during training and testing of personnel in fire protection;
- d. Seawater used to pressure test piping and pipelines;
- e. Ballast water or bilge water;
- f. Non-contact cooling water;
- g. Desalinization unit discharge – the residual high-concentration brine discharged offshore from distillation or reverse osmosis units used for producing potable water. Past operations have discharged at a volume of up to 238 barrels per day (EPA 1993).

Restrictions: No free oil and the most stringent of the following three conditions:

- i. The maximum concentrations and any other condition specified in the EPA product registration labeling if the chemical additive is an EPA registered product;
- ii. The maximum manufacturer's recommended concentration when one exists; or
- iii. 500mg/l

Toxicity testing: 48-hr acute toxicity test will determine if an appropriately dilute effluent sample adversely affects the survival of mysid shrimp and inland silversides. The 48-hr minimum and monthly average minimum NOEC must be equal to or greater than the critical dilution concentration (determined by the discharge rate and the pipe diameter at each facility).

Monitoring: Visual sheen test shall be conducted once per week when discharging.

Monitoring for toxicity will be required at least once per six months when discharging.

discharged. Fluids must also meet both a daily maximum of 42 mg/l and a monthly average of 29 mg/l limitation for oil and grease.

Monitoring: Sampling for the static sheen test will be done daily when a discharge occurs. Grab sampling for oil and grease analysis will be conducted once per month and should not exceed technology-based limits.

3. **Deck drainage** – Any waste resulting from deck washings, spillage, rainwater, and runoff from gutters and drains including drip pans and work areas within facilities subject to this permit. Deck drainage of the largest concern include oil and detergents, drilling fluids, and acids used during workover operations.

Restrictions: No free oil shall be discharged as determined by the presence of a film or sheen upon the surface of the receiving water. Typically these platforms are equipped with pans to collect deck drainage. The drainage is separated by gravity into waste material and liquid effluent. Waste materials are sent to a sump tank for treatment followed by disposal, recycling back to the drilling mud system, or transport to shore. Liquid effluent is discharged to the sea.

Monitoring: Visual sheen test method to be completed once per day when discharging.

4. **Sanitary waste** – human body waste discharged from toilets and urinals located within facilities subject to this permit. The volume and concentrations of these wastes vary widely with time, occupancy, platform characteristics, and operational situation. Past monthly average sanitary waste flows from Gulf Coast platforms was approximately 35 gallons per day (EPA 1993).

Restrictions: No floating solids and residual chlorine to be maintained as close to 1 mg/l as possible for facilities continuously manned by ten or more persons. No floating solids for facilities continuously manned by 9 or less persons. Any facility that properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under Section 312 of the Clean Water Act shall be deemed to be in compliance with permit limitations for sanitary waste.

Monitoring: Observation for floating solids shall be conducted once daily during discharge while sampling for residual chlorine shall be done once per month. If a MSD is being used, yearly testing to insure proper operation is required.

5. **Domestic waste** – Material discharged from galleys, sinks, showers, safety showers, eye wash stations, hand washing stations, fish cleaning stations, and laundries. The volume of domestic waste discharged is estimated to be 50 to 100 gallons per person per day.

Restrictions: No floating solids or foam and require compliance with the requirements of 33 CFR 151. Any soaps and detergents must be phosphate free (contain less than 0.5 percent phosphate).

Monitoring: Observation for floating solids shall be conducted daily during daylight hours by visual observation of the receiving waters in the vicinity of the outfall. Observations shall be made following either the morning or midday meals at a time of maximum estimated discharge.

6. **Miscellaneous discharges** – Various discharges of relatively small, though highly variable quantities.

- a. Hydrate control fluids – used to dehydrate natural gas in deep water operations to prevent pipeline blockages. It is unlikely that these fluids will be necessary in the relatively shallow water wells of the territorial seas of Texas. If used however, they will typically be discharged in the produced water stream and would be limited by the same restrictions.

In addition, the new permit will also include the following improvements:

1. Requirements pertaining to cooling water intake structure regulations per 40 CFR Part 125 Subpart N (Requirements Applicable to Cooling Water Intake Structures for New Offshore Oil and Gas Extraction Facilities under Section 316(b) of the Clean Water Act). These requirements will limit intake velocity, minimize impingement and entrainment, and set monitoring and record keeping requirements (40 CFR 125.134 (b)(2-8)).
2. Increased ambient water monitoring requirements to assess potential future impacts caused by the Deepwater Horizon oil spill that occurred in April 2010.

The Clean Water Act Section 402 authorizes the EPA to issue NPDES permits to regulate discharge into the nation's waters. EPA will issue a permit if they determine that the proposed discharges will not result in unreasonable degradation. Factors for determining unreasonable degradation can be found at 40 CFR 125.122. The EPA's review of information provided for previous issuances of this permit has not resulted in a determination of degradation of the impacted waters.

Threatened and endangered species under the jurisdiction of NMFS that are known to occur in or near the action area of the GP include the North Atlantic right whale (*Eubalaena glacialis*), blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), leatherback sea turtle (*Dermochelys coriacea*), Kemp's ridley sea turtle (*Lepidochelys kempi*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), and loggerhead sea turtle (*Caretta caretta*). Your document also lists Gulf sturgeon as a species known to occur in Texas marine waters; however, Gulf sturgeon have not been documented in Texas and therefore the effects of the proposed action on Gulf sturgeon are not considered further in this consultation. No critical habitat has been designated in Texas; therefore, the project will not affect any critical habitat.

NMFS acknowledges that there have been few scientific studies on the effects of discharged contaminants associated with oil and gas extraction on listed species, and existing data are limited; however, studies have assessed the effects of these contaminants on a variety of other organisms. It has been shown that a variety of chemical concentrations are present in marine organisms, though it is not always known how these contaminants are acquired as many chemical elements are naturally occurring in seawater. Minerals Management Service (now Bureau of Ocean Energy Management – BOEM) analyzed the chemical profiles and toxicity of several chemical compounds commonly associated with the exploration and production of oil and gas from offshore waters, and found that only two chemicals (potassium chloride and zinc bromide) present a potential risk, and only if they were to be spilled in large quantities (i.e. 45,000 gallon spill).¹ The EPA completed a comprehensive review of the wastes and pollutants generated by oil and gas activities and their toxicity to selected marine organisms.² Neff and others looked at the accumulation of mercury (typically from barite) and other metals in flounder, clams, and sand worms and concluded that metals associated with drilling fluid barite are not readily available for uptake by marine organisms.³ Similarly, a 1997 bioaccumulation study indicated no potential for bioaccumulation of discharge contaminants associated with well produced waters (arsenic, barium, cadmium, mercury,

¹ Boehm, P., D. Turton, A. Raval, D. Caudle, D. French, N. Rabalais, R. Spies, and J. Johnson. 2001. Deepwater Program: Literature review, environmental risks of chemical products used in Gulf of Mexico deepwater oil and gas operations; Volumes I and II. OCS Study MMS 2001-011. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA.

² USEPA. 1993a. Development document for effluent limitation guidelines and standards for the offshore subcategory of the oil and gas extraction point source category. EPA 821-R-93-003.

³ Neff, J.M., T.C. Sauer, and N. Maciolek. 1989. Fate and effects of produced water discharges in nearshore marine waters. Prepared for the American Petroleum Institute, Washington, DC.

chromium, copper, lead, zinc, radium-226, radium-228, benzene, toluene, ethylbenzene, xylenes, fluorene, benzo(a)pyrene, total polycyclic aromatic hydrocarbons, phenol, and bis(2-ethylhexyl)phthalate) in biota associated with discharging platforms when compared to biota associated with non-discharging platforms.⁴

Under the previous permit, 24-hour acute toxicity testing of undiluted, produced water was required prior to any discharges; however, limitations of this testing could not be met so no discharges were made. EPA is not aware of any platforms that are currently discharging produced waters to the territorial seas of Texas (facilities are shipping it to shore for disposal/treatment) and does not expect facilities to begin doing so under the reissuance of this GP. If however, a permittee chooses to discharge produced waters in the future, a 24-hr LC50 (greater than 50 percent survival of test organisms over a 24-hr time period) test using 100% effluent (no dilution) will need to be passed prior to the authorization of any discharges. Toxicity testing will be conducted on a sensitive fish (*Menidia beryllina*) and invertebrate (*Mysidopsis bahia*) species, which will act as proxies for other aquatic life. Once authorized, any discharges of produced water will be diluted with seawater according to dilution limits set in the permit, thereby reducing the probability of adverse effects to the surrounding environment. Therefore, NMFS believes that any discharges will have insignificant effects on surrounding water quality and any effects to protected species will also be insignificant.

Section 316(b) of the Clean Water Act requires that "the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." Therefore, the EPA has required that any new facilities (for which construction was commenced after July 17, 2006) that have a design intake capacity of greater than 2 million gallons of water per day, of which at least 25% is used for cooling, may not exceed an intake velocity of 0.5 ft per second. Additionally, the EPA will require monitoring of the intake structures consisting of: (1) monthly visual or remote inspection of the intake structures when in operation or alternatively the use of sensors to continuously monitor the intake structures; and (2) continuous monitoring of intake flow velocity. Because of the limits on water intake velocity (not to exceed 0.5 ft per second) and the fact that intake structures are not located near the water surface, NMFS believes that sea turtles or whales at any life-stage are likely to avoid impingement and entrainment. The entrainment and/or impingement of small fish and plankton could lead to a reduction in available prey for protected species; however, given the productive waters of the Gulf of Mexico and the fact that sea turtles and whales are not expected to be residents of these areas but rather transiting through, NMFS believes it is unlikely that this loss of forage will adversely affect protected species, as any effects will be insignificant. Therefore, NMFS believes the addition of cooling water intake structure requirements is not expected to adversely affect any protected species under NMFS' purview.

Based on the best scientific information available, and the descriptions and restrictions of each proposed discharge type, NMFS believes the re-issuance of this permit is not likely to adversely affect protected sea turtles or whales. NMFS believes that this project's effects on protected species will be insignificant based on the following facts: (1) all discharges must adhere to the EPA state water quality standards and restrictions set forth in the permit, which are intended to protect all aquatic life, including protected species; (2) most of the proposed discharges will be in quantities small enough that any chemicals present will be quickly diluted by the vast receiving waters; (3) restrictions will limit many chemicals and nutrients from entering the receiving waters (i.e. no free oil, no floating solids, no garbage, no foam, phosphate free soap and detergents, sanitary waste treated with chlorine); (4) most platforms transport produced waters to shore; however, if a facility intends to discharge produced waters to the sea, the facility will be required to pass toxicity testing at 100 percent effluent (no dilution), so the actual

⁴ Offshore Operators Committee. 1997. Gulf of Mexico produced water bioaccumulation study. Prepared by: Continental Shelf Associates

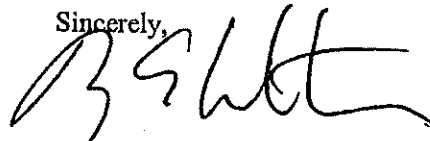
discharge to the sea which will be significantly diluted will have insignificant effects to protected species; (5) based on the EPA, MMS (now BOEM), and bioaccumulation studies cited previously there have been no reported significant adverse environmental impacts resulting from the proposed types of discharges from oil or gas platforms within the Gulf of Mexico; and (6) no changes are proposed in the re-issuance of the permit that will decrease the level of protection set forward in the previous GP. The only changes to the GP include requirements of water intake structures and additional water quality monitoring, which were not required previously. These changes are not likely to adversely affect protected species, as discussed above.

NMFS recommends that scientific studies be conducted to investigate the effects of permitted discharges in both coastal and offshore waters. NMFS also recommends that the EPA evaluate the cumulative impacts of permitted discharges in relation to other anthropogenic inputs such as atmospheric deposition, inputs from rivers, and other sources affecting the marine environment. These efforts may lead to a better understanding of the possible impacts of anthropogenic discharges on listed species and the ecosystems upon which they depend.

This concludes the EPA's consultation responsibilities under Section 7 of the ESA for the proposed action. Be advised that a new consultation must be initiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action.

We have enclosed additional information on NMFS' Public Consultation Tracking System to allow you to track the status of future ESA consultations. If you have any questions, please contact Adam Brame at (727) 209-5958 or by e-mail at Adam.Brame@noaa.gov. Thank you for your continued cooperation in the conservation of listed species.

Sincerely,



Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

File: 1514-22.K

Ref: I/SER/2011/00705

PCTS Access and Additional Considerations for ESA Section 7 Consultations
(Revised 7-15-2009)

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system at <https://pcts.nmfs.noaa.gov/> that allows federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants and their consultants to ascertain the status of NMFS' Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations, conducted pursuant to ESA section 7, and Magnuson-Stevens Fishery Conservation and Management Act's (MSA) sections 305(b)(2) and 305(b)(4), respectively. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The COE "Permit Site" (no password needed) allows COE permit applicants and consultants to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted, or is in the process of conducting, an ESA or EFH consultation with the COE.

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. For example: SAJ-2005-123; SAJ-2005-1234; SAJ-2005-12345.

For inquiries regarding applications processed by COE districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. For example: AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to PCTS.Usersupport@noaa.gov.

EFH Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.